Evaluation of Health Care Professionals in Facilitating Self-Care: Review of the Literature and a Conceptual Model

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A HOLISTIC APPROACH to health behavior begins with a focus on individuals, their interactions with the environment, and how the environment affects their health and well-being. This approach is geared toward those persons who have assumed a considerable amount of responsibility for their own health care such as recognition of symptoms and management of selected health conditions. It is often referred to as "self-care," which is described as "a process whereby a layperson functions on his/her own behalf in health promotion and prevention and in disease detection and treatment at the level of the primary health resource in the health care system."[1(p11)] Roles in self-care include health maintenance, disease prevention, self-diagnosis, self-medication, self-treatment, and patient participation in use of professional services.

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The nurse practitioner is in a strategic position to assist individuals in self-care programs since self-care practices are particularly prominent at the level of primary care. Literature reviewed by Levin, Katz and Holst indicated that practitioners believed that self-care could have been substituted for 25% of the illness episodes seen in general practice (excluding some conditions such as trauma and cancer), and 15% to 18% of those listed illnesses could have had a better outcome if supplemented by self-care.[1]

With few exceptions, health care professionals have focused on the patient as a passive recipient of care. In the past, much of professional concern regarding the public has focused on the extent to which patients accept physicians' advice and the extent to which patients use the care system. More recent emphasis on the patient as an active participant has resulted in the encouragement of social accountability of health care professionals. A need exists for the evaluation of health professionals in facilitating self-care. Such an evaluation must take into account laypersons' judgments regarding the health care received. A conceptual framework is needed for the evaluation of the role of health professionals in facilitating self-care.

COMPONENTS OF A FRAMEWORK

One of the most well-established frameworks in self-care was articulated by Orem in *Nursing: Concepts of Practice.*[2] Orem delineates two kinds of self-care: universal and health deviation. Universal self-care includes all demands necessary for the activities of daily living such as air, fluids, food, elimination, rest, activity, solitude, interaction with others, and protection from hazards. Health deviation care demands derive from illness, injury, or disease. Many nurses currently use this framework as a basis for their practice.

The framework suggested by the author for the evaluation of health professionals is in part derived from Orem's work, and in part from other literature related to the evaluation of quality of care. Three major dimensions are considered in the framework: (1) patient or layperson characteristics, (2) health care professional characteristics, and (3) patient outcomes. As shown in Fig 1, each dimension consists of two or more components. The last dimension, patient outcomes, is influenced by the preceding two.

Characteristics of Individual Laypersons or Patients

To assist patients in the promotion of health and the prevention, detection, and treatment of illnesses, Orem suggests that individual characteristics of the patients must be considered.[2] These factors have been found to influence individuals' needs and perceptions and include (1) age (and developmental stage), sex, level of education, occupation, and marital status, and (2) individual beliefs, expectations, and attitudes. These characteristics are represented by the first circle in Fig 1.

Individual responses to illness, health care, and treatment are influenced by the individual's developmental stage, sex, and supportive network such as spouse or family members. In addition, any health care or potential self-care activities are evaluated by individuals in relation to their

Fig 1. Framework for evaluation of health care professionals in self-care.

own value systems, beliefs, expectations, and attitudes. Research indicates that patient characteristics are associated with both patient satisfaction[3-13] and patient adherence.[14-20] Therefore any assessment of individual patient health status and evaluation of patient outcomes must consider the above patient characteristics. The characteristics can be established in research through the use of demographic variables and selected measures of expectations, attitudes, and beliefs regarding health care.

Characteristics of Health Care Professionals

The second dimension relates to characteristics of the health care professional in facilitating self-care and is represented by the middle circle in Fig 1. Its components include (1) medical-technical component of care, (2) psychosocial component of care, (3) patient participation in care, and (4) type of health care professional (eg, physician, nurse).

MEDICAL-TECHNICAL COMPONENT

The medical-technical aspect of care refers to the practitioners' understanding and application of medical science and technology in recognizing interruptions in health that arise from stress, illness, or injury, or that arise from medical treatments. Technical quality of care has been one of the important components in studies of factors contributing to patient satisfaction.[21] Most studies of medical-technical quality (eg, history taking, physical examinations, counseling) of nurses in ambulatory settings have compared patient evaluations of nurse practitioners and physicians.[22-26] In research terms, this component can be expressed as the number of relevant history and physical examination items included by a health care professional in an assessment for a selected health problem.

PSYCHOSOCIAL COMPONENT

A second component of care is the psychosocial aspect, which includes attention to patients' feelings and responses to their health, treatment, and other factors in the environment. Psychosocial factors are important in nursing. Roy,[27] Johnson,[28] and other nursing theorists have included various psychosocial factors in their conceptual models for nursing care. Research on patient satisfaction indicates that patients were more satisfied when health care providers gave information[29] and showed a personal interest in the patients.[30]

For purposes of research, the psychosocial component can be seen in data obtained regarding patients' feelings about their health status (or illness, symptoms) and how the illness affects their views of themselves, interactions with others, and their daily activities (work, rest). The data may include information elicited by direct questions or by following up patient cues in a selected problem for study.

PATIENT PARTICIPATION

The third component, patient participation in health care, requires that the nurse assist laypersons in participating in their own care. This involves interaction between the layperson and health care professional in which the layperson takes an active part in decision making. The layperson participates in identifying goals, seeking clarification of data, evaluating options, selecting an option, and imple-

In self-care, the layperson participates in identifying goals, seeking clarification of data, evaluating options, selecting an option, and implementing the course of action selected.

menting the course of action selected. This is a key component of self-care that health care professionals must address. Research indicates that the quality of interactions between patients and health care providers influences patient satisfaction,[4,9,10,13] adherence, and compliance.[14,20] However, the amount of patient participation was not addressed in these studies. Involving patients in decision making about the use of medications in the home has been studied. In this model the patient and the nurse jointly identify goals for a given interaction. Goal delineation reflects knowledge and values and is followed by a clarification of data relevant to decision and goal attainment. In this phase the nurse and patient impart knowledge to each other and share values. For example, the patient may reveal that he or she abhors the idea of taking pills for fear of side effects. The nurse can relate to this important concern by sharing information on the drug in question and discussing other ways of managing the problem. This leads directly to identification and evaluation of options and their consequences. Finally, the two parties agree on the selection of one course of action, and the patient is provided with the tools for implementation. Implementation is in the hands of the client. The evaluation of the patient's action in terms of the goal is a joint effort between the nurse and the patient.[31]

The above decision-making approach can also be used in other areas of self-care, such as the identification of signs and symptoms, the meaning of positive signs, and the options available for the treatment of conditions identified by the patient (eg, self-medication, self-management by diet, exercise, change in lifestyle, or using professional services). Ability and skills necessary for meeting universal and health deviation needs can be assessed and facilitated through this approach. Implementing patient participation in health care will involve the delineation of selected content for interaction, as well as the steps in the decision-making process to be followed.

TYPE OF HEALTH CARE PROFESSIONAL

The type of health care professional involved in assisting individuals in self-care may influence patient evaluations of health care. Studies of patient satisfaction indicate that nurse practitioners compare well with physicians.[22,23,32] The acceptance of nurse practitioners, however, may vary. Graham found that satisfaction was significantly greater among parents whose children were treated by nurse practitioners than those who were treated by physicians; however, one third stated they preferred a physician to a nurse practitioner.[22] Further studies have found that experience with nurse practitioners may increase patients' preference for them in performing physical examinations and other procedures.[24]

Evaluation of Outcomes

The evaluation of outcomes is represented by the circle to the far right in Fig

1. The framework proposes an examination of three components in terms of individual layperson or patient outcomes. The first component is an evaluation of the layperson's competence in meeting universal and health deviation needs.

PATIENT COMPETENCE

This component of evaluation would include knowledge and skills obtained by laypersons in order to maintain wellness and recognize signs and symptoms of health deviation. It would also include behavior or action to be taken in instituting appropriate care. This component constitutes an indirect measure of the health care professional in assisting individual patients in self-care. It is recognized that factors other than the quality of the health care professional's care influence this component of outcome. Certainly the individual's preexisting characteristics such as developmental and educational levels, and beliefs, attitudes, and expectations play a role. However, a health care professional should have taken these characteristics into consideration in assisting a patient in self-care. The evaluation of laypersons' competence may be done by the individuals themselves or with the assistance of the health care provider. In practice, such evaluations may be found in teaching diabetics, patient teaching following a myocardial infarction, and in other persons with illnesses requiring long-term care by the patient or family. This component may be evaluated by means of specific written or oral tests of knowledge, a checklist of critical elements in a demonstration of a skill, and the observation of actual patient behaviors in action-taking situations. Patient behaviors in relation to action taking may also be obtained through the use of simulated situations.

Research in the association of knowledge and skill with other types of behavior (such as adherence) has been inconclusive. Although reviews of literature indicate that an increase in knowledge does not necessarily lead to an increase in adherence,[33] it is a prerequisite in terms of helping the patient assume responsibility for self-care.

PATIENT SATISFACTION

The second component is the evaluation of patient satisfaction with care received. There is increased recognition that patient satisfaction constitutes a legitimate measure of quality of care. National standards of practice in nursing emphasize accountability, thus making patient evaluation of health care a key factor. Patient satisfaction as part of the evaluation of quality of care has been observed in the care provided by nurses in hospital settings,[34,35] nurse practitioners,[22,32,36] and other health care professionals.[37]

Satisfaction with care provided by health care professionals may be obtained as a global rating by the patient as well as a specific rating for each component of care: medical-technical, psychosocial, patient participation in planning care, and the type of health care professional. Evaluating each component of care may be particularly helpful to health care professionals so that information may be obtained to determine which of the components are most highly associated with patient satisfaction. In measuring patient satisfaction, as with other outcomes, it is important to take into consideration the patient's preexisting characteristics that influence evaluations.

ADHERENCE TO CARE PLAN

The third component in the evaluation of health care professionals in facilitating self-care is the patient's adherence to the self-care plan. The extent to which the physician's orders are followed by the patient (compliance) has been a key factor in the physician's evaluation of the quality of medical practice. However, compliance implies that the physician is the decision maker and the patient is the person to follow orders or comply. In self-care the individual layperson or patient participates in the decision-making process. Thus individuals need to be informed as to their health status, the meaning of signs and symptoms, and kinds of treatment or options available, each with its own set of consequences. The patient then selects a plan and implements or adheres to the plan selected. Thus adherence includes a wide range of patient behaviors that may include compliance as well as the decision to enter into a treatment program, to terminate a program, or to implement a mutually agreed on plan of care.

Information on adherence is doubling approximately every five years,[38] a fact that is believed to be in part due to an increased awareness of patients' rights, a decline in professional paternalism, and to scientific advances.

Reports of compliance and adherence behaviors show wide variations from 4% to 100%.[38] It is misleading, however, to compare compliance rates from different studies because of the wide variations in operational definitions of compliance among investigators. There has also been a lack of truly objective measures. For example, some techniques have used self-reports, pill counts, detection of drug levels in body fluids and estimates given by physicians, family, and others. Research on adherence to a care plan needs to be highly specific. Rather than observing actual behavior (which is often difficult when studying changes in life-style), two common sources of data are used, each with its own pitfalls: (1) a patient's intent to adhere to highly specific aspects of the plan and (2) an actual log of the patient's activities relating to the plan. Nevertheless, the measurement of adherence remains problematic in research studies.

REVIEW OF LITERATURE

A review of literature describes the self-care approach and various components and characteristics associated with an individual's evaluation of care. The research cited provides further support for the factors included in the framework for the evaluation of health care professionals.

Self-Care

Self-care is an approach that is derived from patients' perceived needs and preferences regardless of whether such needs and preferences conform to professional perceptions of patients' needs.[39] Patients determine the desired outcome in accordance with their decisions as to which risks they choose to contend with or avoid. While this does not preclude the patients from obtaining relevant information and prescriptions from health care professionals such as a physician or nurse, it does shift the decision-making responsibility to the patients. The responsibility is based on patients' perceptions of the risks

involved in the illness, treatment, or various activities (rest, exercise, diet), which many believe to be lay decisions rather than professional ones.

Patients' choices may not always conform to professional values. In medical and nursing literature patients whose choices do not coincide with professional values are said to be noncompliant. A more neutral term may be "adherence" to the health care plan, which may or may not involve patient decision making in the formulation of the plan.

NURSES AND SELF-CARE

Self-care, with its goal of promoting health and preventing disease, and its emphasis on patients as active participants and decision makers, requires that nurses assist patients in arriving at informed decisions and in developing behaviors to improve health. An example of the relevance of self-care to nursing is found in the care of elderly patients with stable chronic diseases. Much of this care must be performed by the patients themselves. It is particularly important, therefore, that nurses develop methods of assisting patients to care for themselves to forestall progression of chronic illnesses, prevent complications, and maintain health at the highest possible level. A care plan that the patient will implement at home must take into consideration patient characteristics such as developmental level, life experiences, and attitudes and beliefs. These characteristics will influence the perceived need for care and the satisfaction with care received, as reflected in the literature cited in the following sections.

PATIENT COMPETENCE

Technical competence of the patient is essential in self-care and includes recognition of symptoms of health and illness and action to be taken. The knowledge and skills necessary for self-care of an older chronically ill adult may include recognition of symptoms of shortness of breath, angina pain, or taking of the individual's own pulse, blood pressure, and medications. The individual may draw on primary health care providers such as nurse practitioners as resource persons. The health professional may facilitate individuals' self-care abilities by examining the individuals and by assisting them in gaining the necessary knowledge and skills. Recent consumer literature on self-care may also be useful.[40]

For the most part, the self-care movement has emphasized the teaching of skills and has placed little emphasis on evaluating the competence of the individual.[41] Accuracy of laypersons in the recognition of symptoms and the adequate management of their problems should also be included. Evaluations of this aspect should include individual knowledge and skills acquired by laypersons as well as their behavior in obtaining professional help when warranted by their conditions. There should be an evaluation of the patients'

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techniques to recognize and verify symptoms and to solve problems. Since the self-care approach allows for varying decisions in some situations, follow-up investigation would help to verify that the most helpful options were considered. When laypersons take such responsibilities, professional reevaluation and guidance are essential. Nurses have a responsibility to assist in the evaluation of self-care situations and to offer feedback and suggestions when necessary.

Patient Satisfaction

As mentioned, there has been an increase in recognition that patient satisfaction constitutes a measure of quality of care. Ware et al found over 100 articles and reports on patient satisfaction published in the last 25 years, attesting to the importance of this concept in evaluation of quality of care.[21]

PATIENT CHARACTERISTICS

A number of studies have reported on the association of patient characteristics with satisfaction with health care.[3-13] Most of these were based on demographic data.

In a study of emergency room patients, Apostle and Oder found no correlation between age and satisfaction.[3] However, in a more recent study, Hulka et al found elderly individuals less satisfied with access to care and financial aspects of health care.[6] Satisfaction with the health care professional in general was seen to decrease with age in men only.[3] Kirscht et al found that older patients had less favorable opinions regarding efficacy of diagnosis and preventive practices.[8] However, there are a number of studies showing that elderly persons are more satisfied than younger persons with their private physicians[3,10,11] and that they are more satisfied with medical services in general.[11] Ware et al found that in homogeneous populations, older people are more satisfied with medical care than younger people and that the elderly rate technical quality less important than the art of care.[13]

None of the work on satisfaction differentiated the elderly (over age 60) into age subgroups. Gerontologists have shown that the elderly cannot be considered a homogeneous group. Important differences exist between "young" old age (65-75) and "old" old age (over 75). For example, there is more physical disability in the latter group,[42,43] a higher incidence of widowhood and living alone, and a higher incidence of mental decline.[44] It is possible that the greater incidence and degree of illness in the older old-age group might make their perceptions of health care different from those of the younger old-age group.

Most studies of patient satisfaction reviewed by Ware et al revealed that educational level, socioeconomic status, and occupational level were all positively correlated with patient satisfaction,[13] both globally,[11,45] and in relation to specific components of art and technical quality.[4,5,7,8,12,13,45] The only study to show no correlation between education or social class and satisfaction was done by Korsch et al.[9] Hulka et al found no correlation between age and satisfaction with the technical quality, art of care, or access to services.[7]

Art and technical quality. In a study examining the measurement of patient satisfaction, Ware et al extrapolated eight dimensions of care addressed by research over the years: (1) technical quality, (2) art of care, (3) accessibility and convenience, (4) finances, (5) physical environment, (6) availability, (7) continuity and (8) efficacy and outcome.[21] Hulka et al[46] and Ware and Snyder[47] suggested that the art of care and technical quality could be distinguished but were highly interrelated. Art was defined as behavior that enabled physicians to deal effectively with patients in order to develop rapport and gain trust, such as calling the patient by name and informing him or her of a procedure before performing it. Technical quality was defined as the number of pertinent items elicited in the history and physical examination.

Studies have alluded to the art of care. Patients indicated that the nurse practitioner was warm and friendly, able to answer patients' questions, and made patients comfortable.[22,32] Technical quality of nurse practitioners has been compared to that of physicians and found comparable in specific patient populations and settings.[22-26] Henriques et al found that annual physical examinations performed by nurse practitioners and physician assistants were well accepted by 30,000 healthy and worried patients in a health maintenance organization over a 37-month period.[48] Physician-nurse practitioner teams were studied by Gardner and Ouimette.[23] In their study, patients were satisfied with history taking, physical examination, and counseling by the nurse practitioner. Team care was rated better than care by the physician only by 51% of the patients; 42% rated team care as equal to physician care. Only 7% of the patients rated team care as worse than physician care.[23]

Psychosocial component. Studies indicated that patients are sensitive to psychosocial aspects of care, although this aspect may not have been specifically delineated. Patients tended to be more satisfied when health care providers gave more information,[29] when counseled by a physician,[10] and when health care providers showed a personal interest.[30] The amount of time spent with patients, the amount of time in clinics,[10] and the nature of communication[9] have also been related to satisfaction.

Orem recognized that potential self-care activities are evaluated by patients in relation to their personal value systems and beliefs. Individual differences in established patterns of responding to stimuli and feelings about health status will affect decisions and self-care actions.[2] Thus before care can be planned, relevant beliefs and feelings of patients about reactions to illness or treatment, how illness may affect interactions with others, and patients' activities in rest, sleep, work, or play should be considered.

The health care professional's interactions with patients in soliciting such information is delineated as a psychosocial component. The emphasis on psychosocial aspects of care is also evident in various frameworks for nursing[27,49] as well as specific literature on nursing care of the aged.[6,50,51] Stewart and Buck noted that studies of health care increasingly have included measures of psychosocial elements of care.[52]

Patient participation. The amount of

patient participation in planning of care has not been studied in relation to satisfaction. Correlational studies suggest that patient satisfaction is sensitive to differences in patient and health care provider interaction.[4,9,10,13,29,30,52]

Principles of education indicate that for behavioral change to take place the learner must take an active part in the learning process to determine the desired outcomes and the best methods to employ in order to achieve the outcomes.[53,54]

In contracting with the patients as a method of planning care, the nurse and patient determine the behavior the patient will agree to exhibit. Kuhn, taking a systems approach to the study of social behavior, identifies three functions (intrasystems or psychological level) within the individual: (1) knowing (knowledge base), (2) wanting (values), and (3) doing (effecting behavior). When two or more individuals are working together (intersystem or social level), communication of knowledge and transfer of values held by each takes place and results in some action by one or more parties (organization of behavior). The plans developed to deal with an ambulatory patient's health problem require that the patient follow through with some action on his or her own behalf. Kuhn's social systems theory suggests that the knowledge and values of both parties (patient and health care professional) be explicated to allow the most appropriate organization of behavior for solution of the given problem.[55] Hallburg's decision-making model,[31] discussed previously, has also been useful in studies of patient participation in decision making.

Type of provider. Studies comparing nurse practitioners and physicians provide some insight into the importance of the health care provider as an issue separate from the quality of care. Studies of patient satisfaction indicate that patients generally express satisfaction with care provided by a nurse practitioner as compared to that provided by a physician.[22-24,26,32,48,56,57] In an early study, Spitzer et al reported that there have been only a few instances of rejection of nurse practitioners' services by patients even when patients have previously expressed negative attitudes.[25] Linn, in a study of family nurse practitioners from the University of California at Los Angeles, reported that from the patient's perspective, the family nurse practitioner is as acceptable as, if not more acceptable than, a physician or a registered nurse.[56]

Despite significantly greater satisfaction among parents whose children were cared for by nurse practitioners, rather than by physicians, when a global question was asked as to preference for physician or pediatric nurse practitioner, fully one third of the respondents preferred physician care because of the physician's perceived extensive preparation.[22] Chenoy et al, in a household survey of a medically underserved rural population in Ontario, found that nurses were acceptable for health maintenance, sickness surveillance, and for home visits if a physician was not available. A physician was preferred in worry-inducing situations. The population studied had not been exposed to nurse practitioner care.[58]

McGlone and Schultz surveyed 300 elderly patients to determine their attitudes toward various health care innovations.[26] Almost all indicated a willingness to accept a nurse as an intermediary in delivery of care. Graduate nurse practi-

tioner students cared for elderly patients in nursing homes and couples in the community, and they were well accepted. Experience with nurse practitioners was seen as influential in their acceptance by patients.[26] Lewis and Resnik studied a control group of 33 patients assigned to regular care in a university medical center and an experimental group of 33 patients assigned to a nurse clinic. All 66 patients had chronic diseases, and there were no intergroup differences prior to the study. After one year there was no change in the attitudes of the control group, but the experimental group had a decrease in frequency of complaints, a decreased tendency to seek physician care for minor complaints, and an increased preference for nurses to perform various procedures (eg, physical examination, laboratory interpretation).[24]

Patient satisfaction may be seen as an end in itself or as one factor in the longer range perspective of patient adherence to treatment regimen, or increased level of wellness. Becker and Maiman's review indicates that positive correlations have been found between patient satisfaction (with the therapist, visit, or clinic) and compliance.[14]

Factors Influencing Patient Adherence to Regimen

For this discussion, *patient adherence* will be used in preference to *patient compliance* because of the broader variety of behaviors the former encompasses. However, literature on patient compliance will be included as compliance and is viewed as one aspect of patient adherence.

Blackwell noted that despite the wealth of literature, adherence is an inadequately studied subject. Two of the major problems have been the poor study designs in published studies and the lack of definition of compliance. He cited a report that evaluated 185 studies, and identified over 200 variables that had been measured, but results from various studies often contradicted each other.[38] Thus a marked lack of consensus exists, and studies have been designed in such a way that measurements in one study are not comparable to measurements in another.

DEMOGRAPHIC CHARACTERISTICS

In a review of the literature, Marston indicated that the results of most investigations have led to the conclusion that age is probably not significantly related to compliance.[33] However, some studies have found that younger patients were less likely to follow their medical regimens than were older patients.[15-17] The comparison for the most part included children and adults under the age of 65 years. Becker and Maiman, however, pointed out that noncompliance and medication errors were associated with extremes of age, perhaps because the very young were more resistant to ingesting bad-tasting medicine, and geriatric patients experienced forgetfulness or self-neglect.[14]

Contradictory findings have been reported regarding the relationship of educational level and compliance. Some investigators[18] have found that increasing levels of education were associated with compliance, while others[19] found that increasing levels of education were associated with noncompliance. Marston's review indicated that socioeconomic status, marital status, and race have not been found to be related to compliance.[33] Kasl noted that

demographic variables are related to adherence in fairly specific ways that represent interaction with other variables.[20]

ATTITUDES AND BELIEFS

A number of studies cite attitudes and beliefs as influencing factors in adherence, such as attitudes and beliefs toward perceived susceptibility to[59-61] and severity of the illness.[19,61-63] Heinzelmann found that among college students with a history of rheumatic fever, continued penicillin prophylaxis was related to subjective estimates of the likelihood of having another attack.[64] Elling et al reported significant positive associations between a mother's belief in the possibility of recurrence of rheumatic fever in her child and compliance in administering the penicillin and visiting a clinic.[65] Christensen's review of the literature on drug compliance noted that diminished compliance was observed in children whose mothers' expectations were not in relation to the cause and nature of the illness.[66] Thus patients' expectations regarding an illness influence compliance.

A number of studies cite attitudes and beliefs as influencing factors in adherence. These include attitudes and beliefs toward perceived susceptibility and severity of the illness.

In a review of the literature, Becker and Maiman concluded that perceived severity of an illness was a factor in compliance.[14] However, they found that for the asymptomatic individual, very low levels of perceived severity were not sufficiently motivating, while very high levels of perceived seriousness (including fear) were inhibiting. Both extremes were found to be associated with low likelihood of taking preventive action. Heinzelmann found the patient's view of the seriousness of rheumatic fever, both in an absolute sense and when compared with other diseases, was predictive of compliance with prophylaxis.[64] Charney et al found that a mother's perception of severity of the illness at onset was significantly related to likelihood of giving the medication. Patients' perceptions of the severity of illness were also predictive of compliance with the prescribed regimen in some preventive and all sick-role conditions studied.[67]

Studies have shown that individual beliefs influence adherence to regimen.[33] Patients who believed that their disease was due to supernatural causes were less likely to continue their treatment than patients who believed that there are measures individuals may take to avoid health hazards.

CHARACTERISTICS OF REGIMEN

Characteristics of medication regimen have been found to be fairly reliable predictors of adherence. Multiple recommendations or restrictions lead to greater noncompliance than single recommendations; multiple drugs or multiple doses of one drug tend to have a higher rate of default. Also, patients who have been on a long medication regimen tend to default more. However, such information is of limited value if the patient suffers from a chronic condition that requires adherence to a regimen for a prolonged period of time. Similarly, the physician's choice of

single or multiple recommendations is based on his or her judgment of what is the best treatment for the patient. A more fruitful area of investigation is the relationship between the patient and the health care provider and patient participation in decision making about the regimen.[20,68]

PATIENT AND HEALTH CARE PROVIDER INTERACTIONS

The nature of the patient and health care provider relationship may influence individual adherence to medication regimen. In an early study, Davis tape-recorded patient-physician interactions and categorized them according to Bales's Interaction Process Analysis. He then examined the relationship between the types of interactions and patient compliance. Patterns of communication (formality, rejection of the patient) that deviate from a normative physician-patient relationship were associated with noncompliance. Behaviors that allowed for tension release, patient agreement with physician, and provision of orientation to physician were associated with compliance.[68] Becker and Maiman[14] found that studies reported greater compliance when the physician is perceived as friendly and understanding of the patient's complaint. Noncompliance was more likely with less reciprocal interaction between the patient and physician and the physician's failure to communicate the purpose of the treatment.[14] Similarly, Kasl noted that possessing correct information about the disease and medication regimen was, at best, weakly related to adherence; the crucial element was probably the nature of the patient's role expectations.[20] However, a more recent study that examined physician-patient interactions reported that compliance was higher in situations where patients were given more information about their drugs.[69] Numerous studies have suggested that unfulfilled patient expectations led to dissatisfaction and poor compliance.[20]

CONCLUSION

A model based on the framework presented can be used to identify components of health care or patient and health care professional interactions that contribute most to measurable outcomes such as patient competence (in health maintenance, disease prevention, self-diagnosis, self-treatment, and use of professional services), and patient evaluations of satisfaction and adherence to a health care plan.

Information from an investigation based on the model can contribute to the practice of nursing in two ways. First, the findings regarding components of care and satisfaction can be applied by nurses to systematically increase patient competence and patient satisfaction. Second, the study may specify patient profiles that interact with different components of care to yield high levels of patient satisfaction and adherence to formulated care plans. The knowledge regarding patient profiles and components of care can be effectively used by nurses to tailor their care to different patients.

Nurses can systematically evaluate their effectiveness in facilitating self-care where patients are given a considerable amount of responsibility for their own health care. Such evaluations will contribute to nursing's professional accountability in assisting individuals in self-care and in taking a holistic approach to health care.

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